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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Killworth, Gottman
Hagan & Schaeff, L.L.P.
Suite 500
One Dayton Centre
Dayton, OH 45402-2023

EXAMINER

TRINH, MICHAEL MANH

ART UNIT

PAPER NUMBER

2822

DATE MAILED: 10/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/740,174

Applicant(s)

PORTER ET AL.

Examiner

Michael Trinh

Art Unit

2822

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 October 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 35-37, 51, 52 and 54-63 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 35-37, 51, 52 and 54-63 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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DETAILED ACTION

*** This office action is in response to Applicant's amendment filed on October 06, 2003.

Claims 35-37, 51-52, 54-63 are currently pending.

*** The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

*** In claims 58 (line 2) and 61 (line 5), the term "the substrate" is lacking a clear antecedent basis, and should apparently be --the semiconductor--.

Claim Rejections - 35 USC § 102

1. Claims 35-37, 54-62 are rejected under 35 U.S.C. 102(e)/(a) as being anticipated by Singh et al (5,712,445).

Singh et al teach a method for forming a SRAM memory cell having an inverter comprising at least the steps of: providing a semiconductor 24/20 of a first type conductivity; forming a well 28 of a second conductivity type in the semiconductor 24; forming a first type transistor in the well, wherein the first type transistor has a first source 34, a first drain 32, and a first gate 30 (Fig 1; col 4, line 17 through col 5); forming in the well a first contact 30 in spaced relation to the first type transistor; forming a second contact 36 in the well in spaced relation to the first type transistor; coupling the first contact 30 to first voltage input V_{DD} ; and directly coupling the second contact 36 to the first source 34, wherein the first source 34 is coupled to the first voltage input V_{DD} through a parasitic resistance R_w of the well 28 (Fig 1-2; col 5, lines 40-65; lines 12-38). Re claim 36, wherein the first contact 30 is a first distance from the first source 34 defining a first parasitic resistance, and wherein the second contact 34 is a second distance from the first source defining a second parasitic resistance (Fig 1). Re claim 37, wherein an N-well 28 is formed in a P-type semiconductor substrate 24 (col 4, lines 20-30), and so that the first type transistor comprises a first p-type region in the well defining the first source, a second p-type region in the well defining the first drain, and a gate over the well. Re claims 53, 54, wherein the first source 34 is coupled to the first voltage input through a parasitic resistance of the well (Figs 1-2), and wherein the first source is coupled to the first voltage input through the series combination of the first and second components of parasitic resistance ($R_w = R_w' + R_w''$, as a result of first and second distance). Re claims 55-56, wherein the distance from

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the first contact 30 to the second contact 36 is greater than distance from the first contact to the first source 34 (Fig 1)), and re further claim 56, wherein the first type transistor is between the first and second contacts. Re claims 58-60, wherein forming a second type pull down transistor outside the well 28, coupling the second transistor to a second voltage input, and coupling the semiconductor substrate 24 to a third voltage input Vss comprising a substrate tie contact 46 proximate to the second transistor (Fig 1), wherein the first transistor comprises a pull up transistor, and the second transistor comprises a pull down transistor. Re claims 57,61-62, wherein a plurality of first type transistor are formed in the well (Fig 5; col 6, line 45 through col 9; Table 1), each transistor including a source, a drain, a gate, coupling to the second contact, wherein a plurality of second type transistors are formed outside the well, coupling to the second voltage input, wherein each of the second transistors has source, drain and gate, wherein each drain of the first type transistor coupled to each drain of the second type transistor, and each source of the second transistors is coupled to the second voltage input.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 51-52 and 63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Singh (5,721,445) taken with Canaris et al (5,406,513).

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Singh et al teach a method for forming at least one inverter as applied above to claims Singh teaches coupling the second contact to the first source, but lacks forming a metallization interconnect layer over the semiconductor substrate for coupling.

However, Canaris teaches forming a metallization interconnection layer over the semiconductor substrate so as to couple the contact (24,16) to the source (22,12; Figs 3,4A), wherein metallization is mentioned at Figure 7,6A-6B and col 5, lines 55-58.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to couple the second contact to the source of Singh by forming a metallization interconnection layer as taught by Canaris. This is because of the desirability to ensure the electrical coupling between the second contact to the first source, wherein the metal layer reduces resistance between the contact and the source.

Response to Arguments

4. Applicant's amendment and convincing remarks filed on October 06, 2003 have overcome the rejection using the Canaris et al (5,406,513) reference.

This office action is made non-final in view of new ground of rejections.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael M. Trinh whose telephone number is (703) 308-2554. The examiner can normally be reached on M-F from 8:30 Am to 4:30 Pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amir Zarabian can be reached on (703) 308-4905. The fax phone numbers for the organization where this application or proceeding is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Oacs-4



**Michael Trinh
Primary Examiner**